

# Does Educational Intervention Make Differences in Knowledge Level Regarding Warning Signs of Pregnancy among Primigravida Women?

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## ABSTRACT

**Background:** Warning signs of pregnancy may cause adverse effects on a pregnant woman and her fetus. Furthermore, it can lead to serious complications during pregnancy.

**Aim:** The study aimed to assess the knowledge of primigravida mothers about warning signs of pregnancy and to evaluate the effectiveness of an information booklet about warning signs of pregnancy.

**Materials and methods:** Quantitative pre-experimental one-group pretest-posttest only research design was used to carry out the study. A sample of 60 primigravida mothers was selected for the study through a non-probability convenient sampling technique. A validated structured knowledge questionnaire was used to assess the knowledge level of the participants before and after information booklet distribution.

**Results:** In the pretest, majority of the participants, 60% had an inadequate knowledge level and 40% had a moderate knowledge level regarding warning signs of pregnancy. In the posttest, majority of the participants, 58.33% had an adequate knowledge level and 41.67% had a moderate knowledge level regarding warning signs of pregnancy. The mean posttest knowledge score of 22.5 was greater than the mean pretest knowledge score of 8. The mean difference of 14 was found to be significant as the 't' value of 28.43 was significantly higher than the tabular value of 2.00 at the 0.05 level of significance. There was no significant association found between the pretest knowledge score and the demographic variable.

**Conclusion:** The study concluded that there was an enhancement in knowledge level among primigravida mothers after the distribution of an information booklet regarding warning signs of pregnancy.

**Keywords:** Effectiveness, Information booklet, Knowledge, Primigravida mothers, Warning signs of pregnancy.

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## AIM

The primary objective and aim of the study was to evaluate the awareness of first time pregnant woman about warning signs of pregnancy with the effectiveness of an information booklet. The secondary objective was to examine the relationship along with knowledge level and sociodemographic characteristics among participants.

## BACKGROUND

Numerous illnesses and ailments that might have a significant impact on both the pregnant mother and her fetus can make pregnancy more difficult. These unanticipated changes or difficulties during a pregnancy can be quite difficult for the mother and her family.<sup>1</sup> Most pregnant women suffer mild ailments or side effects, most commonly heartburn, frequent urination, hemorrhoids, nausea, and vomiting. Other ailments include constipation, coughing, hiccoughing, heartburn, acid reflux, backaches, varicose veins, and anxiety during pregnancy edema, leg pains, and unusual carving.<sup>2</sup> Nega Terefe et al.<sup>3</sup> discovered that obstetric risk indicators were present in 41.3% of the expectant mothers. Vaginal bleeding (15.4%) was the most common obstetric risk sign, followed by body edema (12.7%) and severe vomiting (5.3%).<sup>3</sup> In cases of pyrexia with severe weakness, bleeding per vagina, blurry vision due to severe headache, fits, acute abdomen, or rapid or problematic breathing, the affected women should be taken immediately to the hospital or health center.<sup>4</sup> As per the WHO health data (2019), every day, 810 women died due to

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preventable causes associated with pregnancy and delivery. Maternal mortality ratio (MMR) decreased about 38% globally between 2000 and 2017. Worldwide, low- and lower-middle-income nations account for 94% of all maternal fatalities.<sup>5</sup> In India, the MMR decreased from 398/100,000 live births in 1997–1998 to 99/100,000 in 2020, a fall of

almost 70%. Most of these deaths happened in less wealthy states (63%) and among women between the ages of 20 and 29 (58%).<sup>6</sup> Yosef T and Tesfaye M<sup>7</sup> found that 43.2% of the participants had a strong understanding of pregnancy hazard symptoms, with 65% mentioning vaginal bleeding as one of those signs.<sup>7</sup> Most anticipated mothers in India lack basic knowledge about prenatal, perinatal, and postpartum care. Their lack of communication and transportation resources, poverty, and illiteracy make them prone to negative outcomes.<sup>8</sup> Nithya R et al.<sup>9</sup> revealed that 49.2, 27.2, and 21.2% participants had adequate understanding of warning indicators during labor, pregnancy, and childbirth, respectively.<sup>9</sup> Hymavathi K et al.<sup>10</sup> also found that 46.6% of participants understood the warning symptoms of pregnancy, on average, 43.3% understood poorly, and 6.6% understood very poorly.<sup>10</sup> Radha and Nandyala Ujjwala<sup>11</sup> and Akruti Ramoliya et al.<sup>12</sup> discovered the effectiveness of educational intervention on women who were primigravid; their level of awareness regarding pregnancy warning signs.<sup>11,12</sup>

Because of the high prevalence of pregnancy warning signs, high maternal mortality rate, deficient awareness regarding pregnancy warning signs, and poor antenatal service utilization, we decided on the following subject for research.

### Problem Statement

A study to assess the effectiveness of an information booklet on knowledge regarding warning signs of pregnancy among primigravida mothers in selected hospitals at Udaipur.

## RESEARCH METHODOLOGY

*Research approach:* Quantitative approach.

*Research design:* Pre-experimental one group pretest and posttest research design.

*Research setting:* Selected hospitals at Udaipur, Rajasthan.

*Population:* Study population comprised of all the primigravida mothers attending OPD in the selected hospitals in Udaipur.

*Technique of sampling and sample size:* About 60 primigravida mothers were included in the study by using convenient sampling technique.

*Research instrument:* Research tool was separated into two sections.

### Section A

Sociodemographic characteristics incorporated 7 items, such as age, religion, educational status, family type, place of living, and any previous knowledge about warning signs of pregnancy.

### Section B

It consists of 30 structured knowledge questionnaires on warning signs of pregnancy. The selected parts were:

- Vaginal bleeding (6).
- Persistent severe bleeding (5).
- Pregnancy-induced hypertension (6).
- Preterm labor (9).
- Changes in fetal movement (4).

There was only one right answer for each question, and that answer received a single score. The structured knowledge questionnaire has a maximum score of 30. The knowledge level was evaluated using the same questionnaire for both the pretest and posttest.

### Intervention

The sample was chosen based on the inclusion and exclusion criteria and after obtaining written consent from the relevant authority.

**Table 1:** Distribution of samples according to sociodemographic variables (N = 60)

Variable	Category	Frequency	Percentage
Age in years	<25	21	35%
	26–30	23	38.33%
	31–35	13	21.67%
	>35	3	5%
Religion	Hindu	52	86.67%
	Muslim	04	6.66%
	Christian	04	6.66%
Educational status	Illiterate	9	15%
	Secondary schooling	2	3.33%
	Higher secondary schooling	28	46.67%
	Graduate or more	21	35%
Types of family	Nuclear	32	53.33%
	Joint	28	46.67%
Place of living	Rural	34	56.67%
	Urban	26	43.33%
Previous exposure to knowledge regarding warning signs of pregnancy	Yes	24	40
	No	36	60

**Table 2:** Findings related to area-wise pretest knowledge score of respondents on warning signs of pregnancy

Area	Max score	Mean	Mean %	SD
Vaginal bleeding	6	2.97	49%	1.14
Persistent severe bleeding	5	2.40	48%	1.07
Pregnancy-induced hypertension	6	3.53	58.83%	1.26
Preterm labor	9	3.82	42.44%	1.32
Changes in fetal movement	4	1.73	43.25%	0.81

The mothers gave their informed permission. After a research explanation, a pretest was administered, and an information booklet was distributed regarding warning signs of pregnancy.

## RESULTS

The study findings are explained in the subsequent five sections.

### Section I

Distribution of Sociodemographic Characteristics of the Participants (Table 1).

### Section II

Domain-wise Pretest and Posttest Knowledge Scores of the Participants (Tables 2 and 3)

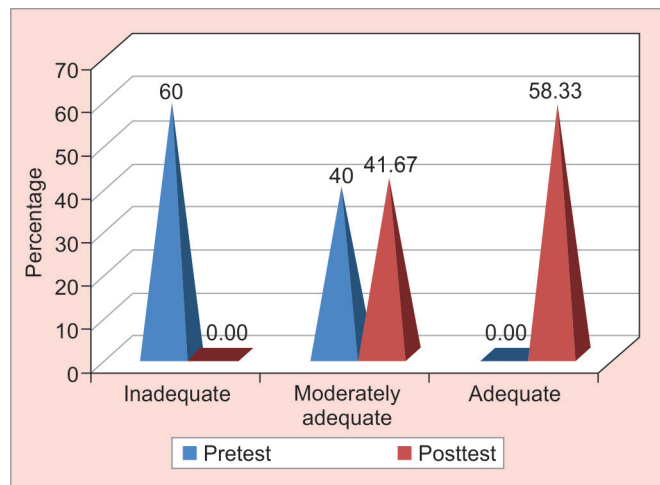
Tables 2 and 3 clearly depict that there was an enhancement in knowledge scores in each area among participants regarding warning signs of pregnancy.

### Section III

Distribution of the participants as per the level of knowledge (Fig. 1).

**Table 3:** Findings related to area-wise posttest knowledge score of respondents on warning signs of pregnancy

Area	Max score	Mean	Mean %	SD
Vaginal bleeding	6	4.21	70.16%	1.78
Persistent severe bleeding	5	3.45	69%	1.81
Pregnancy-induced hypertension	6	5.17	86.16%	2.13
Preterm labor	9	6.68	74.22%	2.32
Changes in fetal movement	4	2.98	74.5%	1.17



**Fig. 1:** Percentage distribution of pretest and posttest level of knowledge among participants

**Table 4:** Comparison between pretest and posttest knowledge score regarding warning signs of pregnancy

Group	Mean	Mean %	SD	Mean Difference	df	t' value	Inference
Pretest	8	26.7%	3.01	14.5	59	13.89	S*
Posttest	22.5	75%	2.61				

**Section IV**

Efficacy of the information booklet on the knowledge regarding warning signs of pregnancy.

Table 4 depicts that the participants' pretest and posttest knowledge scores differed, indicating that primigravida mothers' knowledge scores can be raised by using the information booklet.

**Section V**

Relationship amid pretest knowledge scores of the participants and sociodemographic characteristics.

The Chi-square test revealed no significant correlation between the pretest knowledge score and demographic factors, such as age, religion, educational status, family type, place of living, and any previous knowledge about warning signs of pregnancy (Table 5).

**DISCUSSION**

As per our study findings, the pretest flow of the mean% knowledge score of respondents was on pregnancy-induced hypertension (58.83%), vaginal bleeding (49%), persistent severe vomiting (48%), changes in fetal movement (43.25%), and preterm labor (42.44%).

**Table 5:** Association between pretest knowledge scores of participants with sociodemographic variables (N = 60)

Variable	Below median	Above median	Total	df	$\chi^2$	Table value	Inference
<b>1. Age in years</b>							
<25	12	09	21	3	4.72	7.82	NS
26-30	15	08	23				
31-35	05	08	13				
>35	03	00	03				
<b>2. Religion</b>							
Hindu	33	19	52	2	4.21	5.99	NS
Muslim	1	03	04				
Christian	1	03	04				
Others	00	00	00				
<b>3. Educational status</b>							
Illiterate	04	05	09	3	0.946	7.82	NS
Secondary schooling	01	01	02				
Higher secondary schooling	17	11	28				
Graduate or more	13	08	21				
<b>4. Type of family</b>							
Nuclear	18	14	32	1	0.122	3.84	NS
Joint	17	11	28				
<b>5. Place of living</b>							
Rural	22	12	34	1	1.31	3.84	NS
Urban	13	13	26				
<b>6. Previous exposure to knowledge</b>							
Yes	12	12	24	1	1.14	3.84	NS
No	23	13	36				

Our result was approximately steady with the findings of research carried out by Mesle TT et al.<sup>13</sup> in which the most commonly known danger sign during pregnancy includes severe vaginal bleeding (55.4%). Haleema M et al.<sup>14</sup> also revealed that 67.10% of pregnant women were aware of bleeding per vagina as a warning sign, and 50.0% of participants stated about excessive vomiting as a warning sign of pregnancy. Radhika K<sup>15</sup> also found that the awareness about vaginal bleeding was 37.8%, abnormal swelling 38.29%, severe vomiting 40%, high fever 37.8%, decreased fetal movements 39.83%, and rupture of membranes 47.8% among participants. Our study discovered that in posttest percentage mean score of knowledge among respondents was pregnancy-induced hypertension (86.16%), changes in fetal movement (74.5%), preterm labor (74.22%), vaginal bleeding (70.16%), persistent severe vomiting (69%). Akruiti Ramoliya et al.<sup>12</sup> also found that there was an enhancement in knowledge level in each area regarding warning signs of pregnancy among participants. In the pretest, the study has revealed that the majority of the respondents, 60% had an inadequate knowledge level and 40% had an average knowledge level about warning signs of pregnancy. In the posttest, majority of the participants, 58.33% had adequate knowledge level and 41.67% had average knowledge level about warning signs of pregnancy. Our result was consistent with the results of the study conducted by Radha and Nandyala Ujjawala,<sup>11</sup> in which 38% of the expectant mothers had moderate knowledge

and 62% had inadequate knowledge in the pretest, while 41% of expectant mothers had moderate knowledge and 59% had adequate knowledge in the posttest, regarding warning signs of pregnancy. Approximately, similar results were found by Mishra P and Singh P,<sup>16</sup> in which in the pretest, 37% of the primigravida women had moderate knowledge and 50% had inadequate understanding, whereas 35% of the primigravida women had average knowledge and more than half (63%) had sufficient knowledge in the posttest. Kumar B et al.<sup>17</sup> also revealed that 64% of the primigravida women had a moderate knowledge level and 24% possessed insufficient knowledge score in the pretest, whereas 78% had sufficient knowledge level and 22% had an average knowledge level about pregnancy-related problems in the posttest. Sadhana Rai<sup>18</sup> also found that there was an enhancement in the knowledge level among participants after educational intervention. According to our research, the average posttest knowledge score of 22.5 was higher than the average pretest knowledge score of 8. The difference between the mean knowledge level 14.5 was found significant as observed 't' value 28.43 was considerably higher than the table value at the 0.05 significance level. Gobran M et al.<sup>19</sup> also found improvements in 63% of pregnant women's knowledge and practices after an educational program in all aspects regarding obstetrical dangerous signs. Tak HK and Chaturvedi D<sup>20</sup> and Takoo Sarla et al.<sup>21</sup> revealed the effectiveness of educational interventions while conducting research with primipara and pregnant mothers. The Chi-square test in our study revealed no significant correlation between the pretest knowledge score and demographic factors. Misgan Legesse Liben et al.<sup>22</sup> found that formal education was significantly linked with the awareness of pregnancy risk signs among participants. Mahalingam G and Venkatesan M<sup>23</sup> revealed that demographic variables were not associated with the knowledge scores of the participants. Rimpi Devi<sup>24</sup> also found that no relationship was observed between the knowledge level of the participants regarding danger signs of pregnancy. Vijay NR et al.<sup>25</sup> revealed a contradictory finding in which all demographic variables under his study were significantly associated with the knowledge of the participants. Teshome B and Feleke Y<sup>26</sup> also revealed that family size, parity, age, and advice on danger signs of pregnancy at an ANC visit were significantly associated with the knowledge about danger signs of pregnancy.

## CONCLUSION

The findings of our study suggest that there was an enhancement in the knowledge level among primigravida mothers after information booklet distribution. Knowledge level was not associated with the academic and educational status of the participants either. This means that regular, specific educational intervention is a must for antenatal mothers to reduce pregnancy-related problems.

## Limitations

Generalizations were challenging due to the small sample size (60). Data collecting did not employ a standard tool. Only knowledge aspect was assessed.

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